Knowledge Management Capability Matrix

Work in Progress

December 2001

Agenda

➢ Purpose
  ✓ Why develop a KM Capability Matrix?

➢ Methodology
  ✓ Based on what proven methodology did we develop the matrix?

➢ Structure
  ✓ Into what general areas do we break down KM capability?

➢ Matrix
  ✓ What does the matrix consist of?

➢ Next Steps
  ✓ How do we continue to improve the matrix?

Purpose

- An organized set of capability descriptions or traits that aids in
  - assessing current level of capability
  - identifying opportunities for improvement & potential problem areas
  - developing targeted goals/plans for achieving higher levels of capability

Purpose

Why a KM capability matrix?

- KM is still in the infancy stage
  - Structure and benchmarks provide an organized way of understanding KM capabilities and benefits
  - A capability matrix can serve as a springboard from which investment decisions can be analyzed
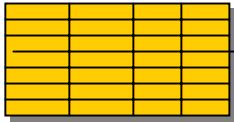
Methodology
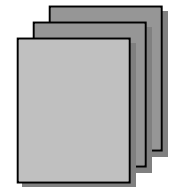
Form

KM Capability Matrix

Content

SEI CMM

Core Competency
Excellence Grid
Data Management
Capability Model

LESAT

Literature
Review

IT Advisor for KM

Interviews

	Baseline	Initial	Transitional	Advanced
Culture				
Knowledge Use				
Workforce Socialization				
Workforce Collaboration				
Perceived Incentives				
Mutual Trust				
Change Agents				
Participation				
Leadership				
Strategic Objectives Integration				
KM Policy				
Resource Commitment				
View of Knowledge Capital				
Personal Commitment				
Knowledge Sharing Iincentives				
Expectations				
Knowledge Base				
Target & Capture				
Structure				
Access & Exchange				
Validate & Refresh				
Create, Use, & Reuse				
Community Building				
Target & Capture				
Structure				
Access & Exchange				
Validate & Refresh				
Create, Use, & Reuse				

Structure

	Baseline	Initial	Transitional	Advanced
Culture				
Knowledge Use				
Workforce Socialization				
Workforce Collaboration				
Perceived Incentives				
Mutual Trust				
Change Agents				
Participation				
Leadership				
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Validate & Refresh				
Create, Use, & Reuse				
Community Building				
Target & Capture				
Structure				
Access & Exchange				
Validate & Refresh				
Create, Use, & Reuse				

Structure

- "Capability" is defined as the present state of KM within an organization and its readiness to adopt KM best practices

Baseline	Initial	Transitional	Advanced
Knowledge is not managed. The process is characterized as ad hoc, and occasionally even chaotic. Organizational emphasis is on access to data not knowledge. Knowledge sharing is not promoted or enabled. Few processes are defined, and success depends on individual initiative.	Knowledge sharing emerging as a business rule, but not yet nurtured. Basic KM processes for capture are established. Organizational emphasis is on technology (e.g., storing, retrieving, managing) and access (e.g., databases, files)	Knowledge sharing is a business rule. The process is documented and integrated into the overall business process. Cultural changes and management actions support collaboration, knowledge base building, access to knowledge. Measures of process and product quality are collected, understood, and controlled.	KM is becoming a transparent activity. Simply considered a part of doing business. Supports all internal and external business needs. Continuous process improvement enabled by quantitative and qualitative feedback.

Structure

- ❑ Culture
  - ❑ Knowledge Use
  - ❑ Workforce Socialization
  - ❑ Workforce Collaboration
  - ❑ Perceived Knowledge Sharing Incentives
  - ❑ Mutual Trust
  - ❑ KM Change Agents
  - ❑ Participation

Structure

❑ Leadership
  - ❑ Strategic Objectives Integration
  - ❑ KM Policy
  - ❑ Resource Commitment
  - ❑ View of Knowledge Capital
  - ❑ Personal Commitment
  - ❑ Knowledge Sharing Incentives
  - ❑ Expectations

Structure

❑ Knowledge Base & Community Building
  ❑ Target & Capture
  ❑ Structure
  ❑ Access & Exchange
  ❑ Validate & Refresh
  ❑ Create, Use & Reuse

Capability Matrix

	Baseline	Initial	Transitional	Advanced
	Physical and/or geographical boundaries. Limited interaction among colleagues across functional and organizational areas of expertise and across experience levels.	Socialization among physically and/or geographically co-located individuals, but typically within functional and organizational areas of expertise and similar experience levels.	Active involvement of workforce across physical and geographical boundaries.	Highly socialized, highly connected workforce through physical or virtual mechanisms. Unrestricted, no-penalty communication across experience and management levels.

Culture

Knowledge Use				
Workforce Socialization				
Workforce Collaboration				
Perceived Knowledge Sharing Incentives				

Capability Matrix

		Baseline	Initial	Transitional	Advanced
Leadership	**Strategic Objectives Integration**	No organization of resources (technical and non-technical enablers) dedicated to nurturing knowledge sharing.	Independent KM funding requires quantitative justification. Limited resources due to loose connection between knowledge initiatives and strategic objectives.	Independent KM funding based on management recognition of KM value (i.e., a justifiable funding request will be granted). Recognizes that resources are required for staffing, training, and process development, not just technology.	Considered a cost of doing business. Embedded in other funding streams.
	KM Policy				
	Resource Commitment				
	View of Knowledge Capital				
	Personal Commitment				
	Knowledge Sharing Incentives				
	Expectations				

Next Steps

- Continue to improve the content and usability of the matrix

- Continue to develop a methodology and a tool that help link organizational goals to KM investment decisions

- Document guidelines, best practices, and lessons learned to help organizations increase their KM capability

Information

- For further information on the
  KM Capability Matrix or
  the Investment Decision Tool,
  contact Jay Mandelbaum, OSD(AT&L)
  - 703-614-3882
  - jay.mandelbaum@osd.mil

Areas	Sub Areas	Capability			
		Baseline	**Initial**	**Transitional**	**Advanced**
Capability Definition	Capability is defined as the present state of KM within an organization and its readiness to adopt KM best practices.	Knowledge is not managed. The process is characterized as ad hoc, and occasionally even chaotic. Organizational emphasis is on access to data not knowledge. Knowledge sharing is not promoted or enabled. Few processes are defined, and success depends on individual initiative.	Knowledge sharing emerging as a business rule, but not yet nurtured. Basic KM processes for capture are established. Organizational emphasis is on technology (e.g., storing, retrieving, managing) and access (e.g., databases, files)	Knowledge sharing is a business rule. The process is documented and integrated into the overall business process. Cultural changes and management actions support collaboration, knowledge base building, access to knowledge. Measures of process and product quality are collected, understood, and controlled.	KM is becoming a transparent activity. Simply considered a part of doing business. Supports all internal and external business needs. Continuous process improvement enabled by quantitative and qualitative feedback.
Culture	**Knowledge Use**	Data and information are used to make incremental changes to existing norms, values, and processes, e.g., automating a previously manual process.	Knowledge is used to make incremental changes to existing norms, values, and processes.	Knowledge is used to shift to different known assumptions and modes of operation (paradigms).	Knowledge is used to reflect on, and change if needed, existing assumptions, processes, operating norms, structures.
	Workforce Socialization	Physical and/or geographical boundaries. Limited interaction among colleagues across functional and organizational areas of expertise and across experience levels.	Socialization among physically and/or geographically co-located individuals, but typically within functional and organizational areas of expertise and similar experience levels.	Active involvement of workforce across physical and geographical boundaries.	Highly socialized, highly connected workforce through physical or virtual mechanisms. Unrestricted, no-penalty communication across experience and management levels.
	Workforce Collaboration	Stovepiped organization. Projects, products, and new business developed independently within organizational groups. Limited cross-matrixing of staff expertise. Limited leveraging of past or on-going related efforts across the organization.	Sharing of expertise and products upon completion. Limited attempts to identify related efforts within organization prior to new starts.	Regularly scheduled opportunities to share on-going and future efforts across organizational boundaries, e.g., business development opportunities, new tasks, new hires, organizational partners.	Organization-wide interaction and collaboration through physical or virtual interaction; cross-functional matrixing; no-blame environment (reward vs. penalize); active CoPs in all areas of vital business interests. Organizational "centers of excellence" available to all staff and their customers.

Areas	Sub Areas	Capability			
		Baseline	Initial	Transitional	Advanced
Culture	**Perceived Knowledge Sharing Incentives**	Protective of personal and professional knowledge. Hoarding data and knowledge is good for individuals to enhance control and advancement. Penalized for knowledge sharing. Consequences of knowledge sharing act as disincentives.	Knowledge is shared upon request and at the discretion of the owner based on the requestor and its intended use. Sharing is limited by ability to make interpersonal contact and the sharer's judgment of the reward for sharing (professional esteem, altruism). Consequences of incentives are unpredictable; tend to be case-specific. Efforts to remove disincentives have been partially successful. Incentives applied on a project- or team-specific basis.	Knowledge sharing is viewed as having consistently positive rewards. Sharing enhances an individual's standing in the professional/social community. Incentives actively nurture and reward workforce interaction and collaboration.	Mutual tangible and intangible benefits to the individual and the organization from sharing explicit and tacit knowledge and from participating on knowledge communities. Participation and proponency are transparent. Knowledge sharing incentives no longer required. Knowledge sharing embedded in the organizational culture.
	Mutual Trust	Absence of trust. Knowledge exchanged only through negotiated agreements.	Trust limited to people you know.	Generalized trust within the CoP that shared knowledge will be used for mutual benefit.	Generalized trust throughout the organization that knowledge is used for mutual benefit.
	KM Change Agents	No change agents.	Change agents are sporadically distributed risk-takers and thought-leaders.	Bandwagon effect. Nearly everyone is a champion. Change becomes self-generating, initiated by employees as well as change agents.	Change agents no longer necessary. KM integrated into business process.
	Participation	Little or no participation.	Early adopters only.	In period of rapid adoption.	Taken for granted.
Leadership	**Strategic Objectives Integration**	Concepts and benefits of KM principles and practices are not evident in the strategic objectives.	KM is recognized, but relegated to lower levels and fragmented.	Business growth implications of KM are understood and KM plans are formulated, but not integrated with strategic objectives.	Strategic objectives leverage the results of KM implementation.
	KM Policy	No awareness of KM in policy.	KM policy is ad hoc and reflects experimental state of KM.	KM policy integrated with strategic objectives. Covers all facets including culture.	KM policy no longer independent; embedded in other policy.

Areas	Sub Areas	Capability			
		Baseline	**Initial**	**Transitional**	**Advanced**
Leadership	**Resource Commitment**	No organization of resources (technical and non-technical enablers) dedicated to nurturing knowledge sharing.	Independent KM funding requires quantitative justification. Limited resources due to loose connection between knowledge initiatives and strategic objectives.	Independent KM funding based on management recognition of KM value (i.e., a justifiable funding request will be granted). Recognizes that resources are required for staffing, training, and process development, not just technology.	Considered a cost of doing business. Embedded in other funding streams.
	View of Knowledge Capital	Values technology and other traditional physical assets over experienced and creative workforce.	Recognizes people as knowledge assets. Remains focused on explicit knowledge.	Recognizes value of tacit, as well as explicit, knowledge assets.	Values people and their knowledge as critical to the organization's ability to adapt, survive, and compete in the face of discontinuous change.
	Personal Commitment	Level of commitment among senior managers is variable -- some endorse while others actively resist.	Senior managers buy into group commitment.	KM is integral in all aspects of enterprise-wide meetings, senior staff meetings, etc.; senior managers personally and visibly lead KM transition.	Senior managers are KM champions, and foster and mentor champions throughout the organization. Senior managers who cannot or will not adapt are replaced.
	Knowledge Sharing Incentives	Consequences of knowledge sharing act as disincentives.	Consequences are unpredictable; tend to be case-specific. Efforts to remove disincentives have been partially successful. Incentives applied on a project- or team-specific basis.	Knowledge sharing is viewed as having consistently positive rewards. Actively nurtures and rewards workforce interaction and collaboration.	Knowledge sharing incentives no longer required. Knowledge sharing embedded in the organizational culture.
	Expectations	No specific KM expectations. Knowledge manages itself on an ad hoc basis.	Expectations are unstable. No consistent understanding of KM's impact on organization and workforce. Working to understand opportunities and limitations of KM and the problems that it can solve.	Expectations are experience-based. KM's impact on organization and workforce is characterized. Preliminary understanding of opportunities and limitations of KM and the problems that it can solve. (Big jump to excellence.)	KM is routine part of organization business planning.

Areas	Sub Areas	Capability			
		Baseline	**Initial**	**Transitional**	**Advanced**
Knowledge Base	**Target & Capture**	*Ad hoc* process for capturing structured and semi-structured data and information, such as reports and briefings. No capability to target high-value knowledge assets.	Organization-wide process for capturing structured and semi-structured data and information, plus early, *ad hoc*, local attempts at unstructured data and information. Early attempts at targeting high-value knowledge assets.	Organization-wide process for capturing structured, semi-structured, and unstructured data and information, plus early, *ad hoc,* localized attempts at tacit information. Process exists for targeting and rewarding well-regarded individuals and groups, high-profile projects, highly-repeated tasks, regularly updated knowledge assets for capture.	Organization-wide process for targeting and capturing high-value knowledge assets. Process is embedded in organizational business practices and replicated across the organization.
	Structure	*Ad hoc* structures in place for organizing captured knowledge assets. Structures are tailored and meaningful only to local owners.	Early attempts at developing an organization-wide structure to organize knowledge assets, but no real attempt to understand and develop a taxonomy meaningful and flexible enough to accommodate organization-wide and future knowledge needs.	Centralized rules, capabilities, and processes for structuring knowledge assets. Technical architecture is well-defined.	Centralized rules and capabilities for structuring knowledge assets is available and consistently applied across the organization.
	Access (Search) & Exchange	*Ad hoc*, localized ability to access and exchange knowledge assets using common business tools (e.g., e-mail). Exchange typically limited to co-located individuals or to exchanges of relatively small file sizes.	Organization-wide ability to access and exchange knowledge assets facilitated by sophisticated exchange technologies. Developing more robust capability for external access and exchange.	Initial "push" capability whereby individuals are alerted of knowledge assets of interest and can be directly linked to the asset.	Fully defined "push" and "pull" capability and ability to access and exchange knowledge assets both internally and externally.
	Validate & Refresh	Content is validated one time, e.g., published reports, standards, rules and procedures. Outdated knowledge is archived only to address issues of space.	Content is validated and incrementally revalidated as content changes. Knowledge is refreshed on an *ad hoc* basis based on local rules.	Content is validated through use. No provisions for self-correction embedded in the knowledge sharing process. Knowledge is refreshed according to a documented process.	Content is validated through use. Provisions for self-correction are embedded in the knowledge sharing process and are replicated across the organization. Process for knowledge refresh is replicated across the organization.

Areas	Sub Areas	Capability			
		Baseline	**Initial**	**Transitional**	**Advanced**
Knowledge Base	**Create, Use & Reuse**	Formal process for creating and contributing new knowledge assets does not exist. Use of captured knowledge limited to local areas.	Formal process for creating and contributing new knowledge does exist, but is not known to many in organization. Use of captured knowledge gaining ground, but issues of trust and availability remain.	Formal process for creating and contributing new knowledge is documented and well-integrated into the overall business process. Incentives in place to support process. Use of knowledge assets is wide-spread.	Process for creating and contributing new knowledge is routine part of doing business. Organizational dependency on the re-use of knowledge assets. Cost and time estimates include consideration of knowledge re-use.
Community-Building	**Target & Capture**	*C*apture of tacit knowledge depends on individual initiative and contacts. Organizational and individual expertise maps do not exist; only contact information with title, name, and phone number exist. No capability to target individuals or organizations with high-value expertise and experience. Use of "ask-a-buddy" and broadcast e-mails. Few, if any, communities of practice exist.	Organizational maps contain current locations of community data and information across the organization. Individual maps contain contact information and real expertise, not expertise conveyed through a title. Early attempts at targeting individuals and organizations with high-value expertise and experience. CoPs form on an *ad hoc* basis to target and capture expertise.	Organizational maps contain current locations of data, information, and experience across the organization and its trading partners. Individual maps contain individuals' title, contact information, and current functional and subject matter expertise. Process exists for targeting and rewarding well-regarded individuals and organizations for capture. Defined process for establishing CoPs.	Organizational maps contain location of data, information, experience, and expertise across the organization, its trading partners, and potentially its competitors. Individual maps contain individuals' title, contact information, functional and subject matter expertise, level of experience, context, and specialized knowledge. Process for targeting of well-regarded individuals and organizations for capture is embedded in organizational business practices and replicated across the organization. CoPs self-organize as a routine part of the business process.
	Structure	No structure in place for the organization of tacit knowledge. Few, if any, communities of practice exist.	Early attempts at developing an organization-wide structure to characterize individual and organizational expertise, but no real attempt to understand and develop a taxonomy meaningful and flexible enough to accommodate organization-wide and future knowledge needs. CoPs form on an *ad hoc* basis based on immediate business need.	Centralized rules, capabilities, and processes for characterizing individual and organizational expertise. Documented processes for establishing and sustaining CoPs.	Centralized rules, capabilities, and processes for characterizing individual and organizational expertise are available and consistently applied across the organization. CoPs are routinely formed along organizational-, functional-, product-, and initiative-based lines.

Areas	Sub Areas	Capability			
		Baseline	**Initial**	**Transitional**	**Advanced**
Community-Building	**Access (Search) & Exchange**	Discovery and exchange of tacit knowledge depends on individual initiative. Exchange typically limited to co-located individuals. Few, if any, communities of practice exist.	Organization-wide access and exchange of tacit knowledge usually takes the form of formal training. Individuals participate or subscribe on an *ad hoc* basis to virtual exchange mechanisms, such as chat rooms, threaded discussions, and list servers. Limited number of CoPs in existence.	Organization-wide access and exchange of tacit knowledge through on-the-job training, mentoring, learning through observation, and number of CoPs.	Organization-wide access and exchange of explicit and tacit knowledge primarily through CoPs organized along organizational-, functional-, product-, and initiative-based lines.
	Validate & Refresh	Tacit knowledge is validated and refreshed through individual judgment and contact.	Organization and individual maps are updated on an *ad hoc* basis according to organizational or individual initiative. Tacit knowledge exchanged through virtual means (e.g., chat rooms, threaded discussions, and list servers) is validated and incrementally validated as content changes. CoPs, where they exist, serve a self-policing function.	Defined processes exist for validating and refreshing expertise maps. CoPs have defined processes for self-policing areas of interest or expertise.	Defined processes for validating and refreshing expertise maps are well-understood and consistently applied across the organization. CoPs have defined, documented, and well-understood processes for self-policing areas of interest or expertise that are consistently applied across the organization.
	Create, Use & Reuse	Formal process for creating and contributing new knowledge does not exist. Use of organizational experience and expertise is limited to local areas.	Formal process for creating and contributing new knowledge does exist, but is not known to many in organization. Use of organizational experience and expertise gaining ground, but issues of trust and access remain.	Formal process for creating and contributing new knowledge is documented and well-integrated into the overall business process. Incentives in place to support process. Use of organizational experience and expertise is wide-spread.	Process for creating and contributing new knowledge is routine part of doing business. Organizational dependency on its individual and organizational experts. Cost and time estimates include consideration of knowledge re-use.

A number of references were used in the development of this capability matrix and will be enumerated in future versions. These references include literature on organizational learning, social learning, social identification, and knowledge management. References also include the Software Engineering Institute's Capability Maturity Model, the Lean Aerospace Initiative Team's Lean Enterprise Self-Assessment Tool, and Microsoft's IT Advisor for KM.